



Rainy River/Rainy Lake Basin Spring 2022 Flooding

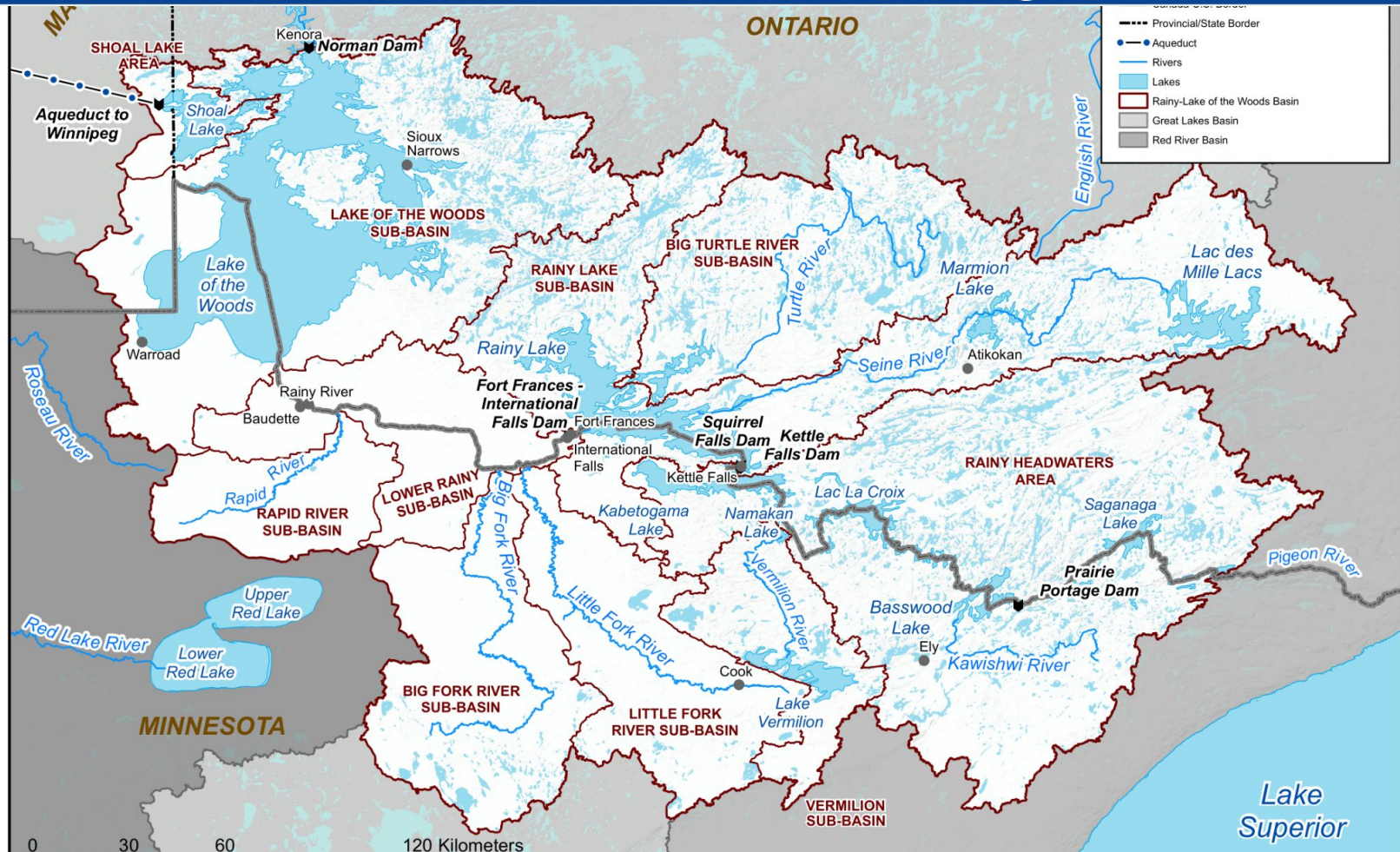
Monday May 30, 2022 Briefing

Recent Past Weather	Forecast Weather Next 6-10 Days	River and Lake Levels - Current and Future	Impacts (Damage) Observed So Far	Key Messages to stakeholders and the public
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Basin Overview - What are we focusing on?



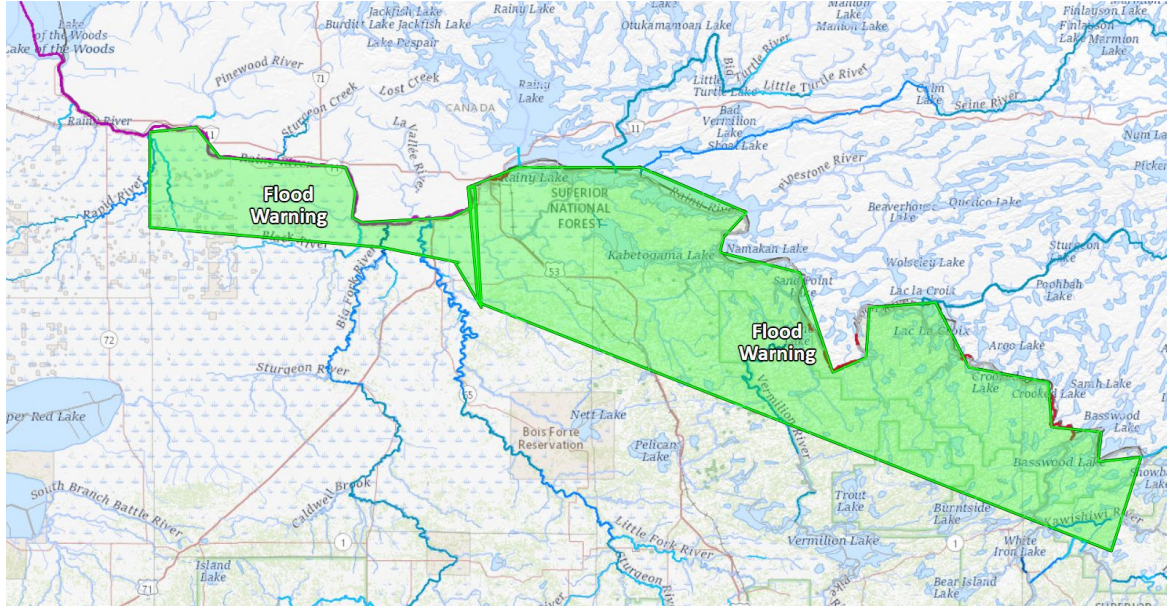
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Flood Warnings in effect

- A new Flood Warning was issued for Rainy River in northwest Koochiching County based on anticipated rises from the rainfall today





Recent Past Weather

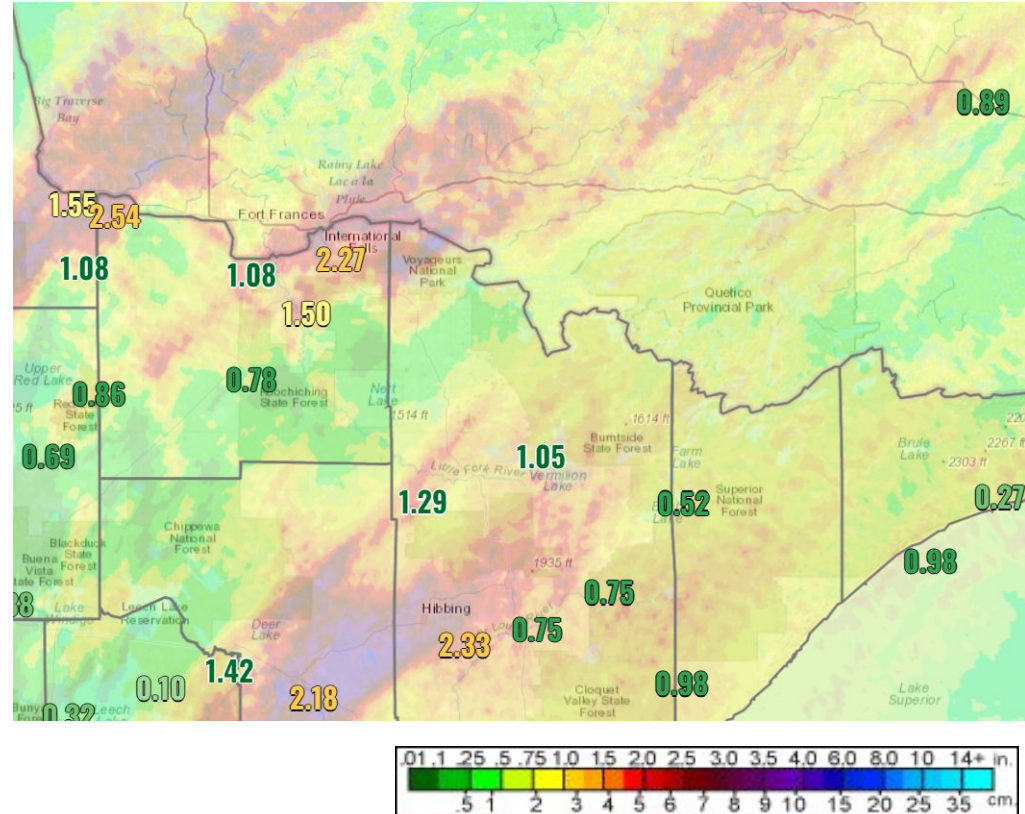




(Sat May 28 3pm to Mon May 30 at 3pm)

- We are in the midst of a wet couple of days with showers and storms
- Rainfall amounts vary due to individual thunderstorm tracks

Daily Rainfall at International Falls <i>(ending at midnight)</i>						
5/23	5/24	5/25	5/26	5/27	5/28	5/29
0"	Trace	0.02"	0"	0"	T	0.83"





Forecast Weather

Next 6-10 Days

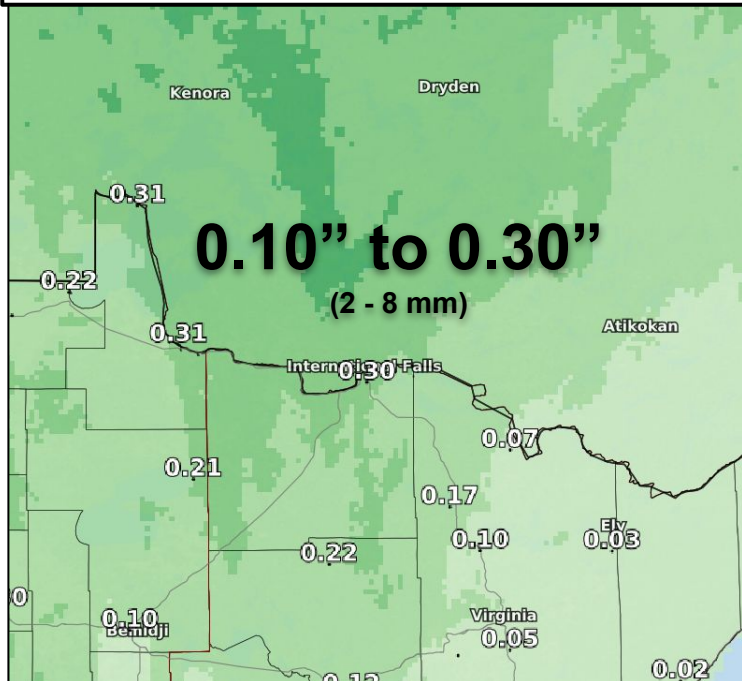




Precipitation Forecast - Current NWS Forecast

Basin Average Precipitation

Forecast Rainfall Tuesday 5/31



- **Tuesday:** One last round of showers and thunderstorms. Around 0.10" to 0.30" rain expected
- **Wed 6/1 thru Thurs 6/9:** **Dry weather pattern**, just a few low chances for light precipitation.
- **Beyond Mon 6/9:** Near to slightly above normal precipitation expected



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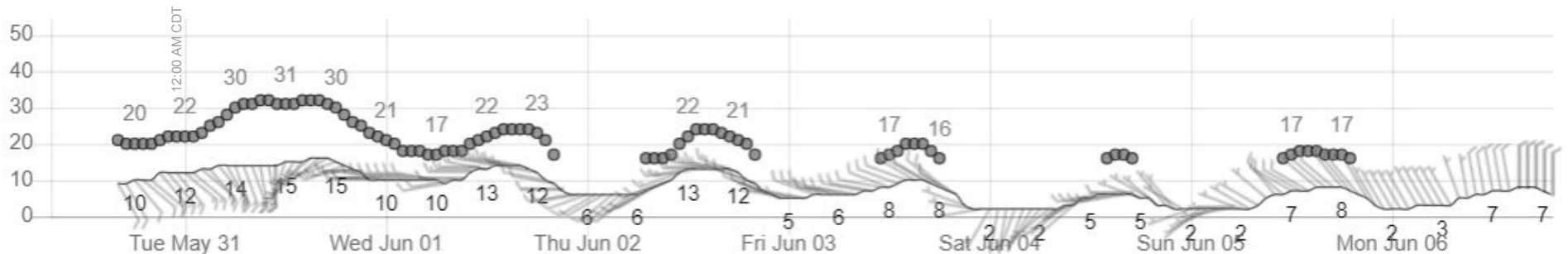
Wind Forecast for Rainy/Namakan/Kabetogama Area

Wind Speed & Gust Forecast (mph)

Arrows indicate direction and speed of winds, dots represent wind gusts of 15 mph or more.

*****Does not take include any thunderstorm-driven wind gusts*****

[For latest hourly weather forecast, click here](#)



**Afternoon
Wind
Direction:**

S/SW/W

WEST

WEST

WNW

WNW

NW

NORTH

NWS Grand Forks Wave Forecast for Lake of the Woods: https://www.weather.gov/fgf/lake_info



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Current & Forecast River/Lake Levels

Next 6-10 Days and Beyond





Bottom Line Up Front: Record Levels Likely To Be Met

Rainy and Namakan Lake Forecast as of May 30

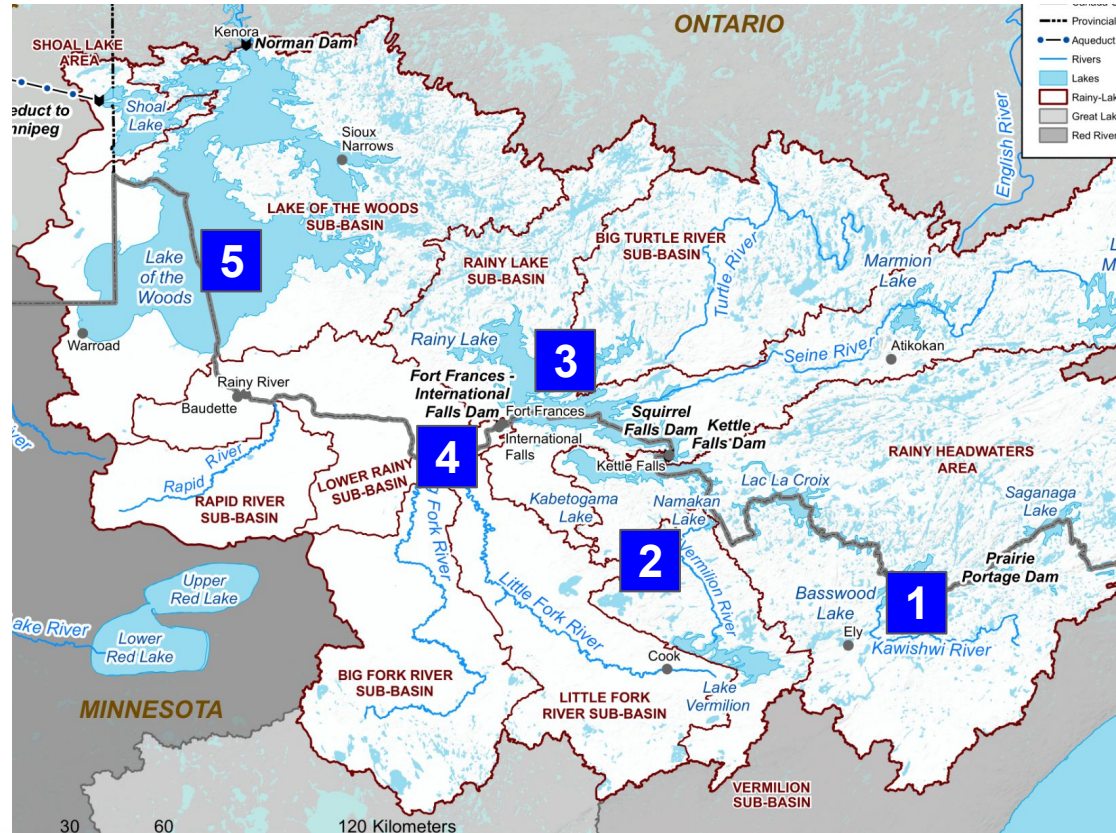
- Inflows continue to be higher than outflows for Namakan, Rainy, and Lake of the Woods. Until inflows are less than outflows, lake levels will not begin to decrease.
- Namakan Lake (and Kabetogama Lake) level is 1122.2 ft (342.06m), 20.5 inches (52 cm) above the peak level reached in 2014. The level of Namakan lake is expected to rise by 1 to 2 inches (2-4cm) over the next few days then begin to fall. This is based on expected rainfall today/tonight - if rainfall amounts are much higher then rises could linger longer.
- Rainy Lake level is 1112.4 ft (339.05m), 12 inches (29 cm) above the 2014 peak and 7 inches (8 cm) below the record peak set in 1950 (1112.95 ft/339.23m). The level of Rainy lake is expected to rise by 8 to 11 inches (21-28 cm) over the next 7 days, breaking the record 1950 peak. Beyond the 7-day forecast window, the rate of rise will slow but a peak is unlikely before mid June.





Going through the basin (roughly upstream to downstream)

1. Headwaters Area
2. Crane Lake, Kabetogama, Namakan
3. Rainy Lake
4. Rainy River past International Falls (Little/Big Fork)
5. Lake of the Woods



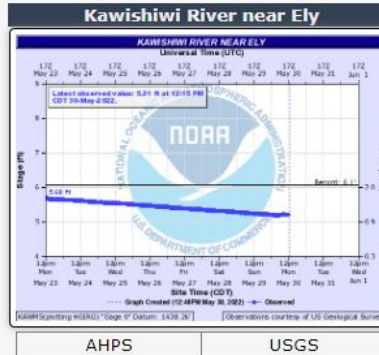
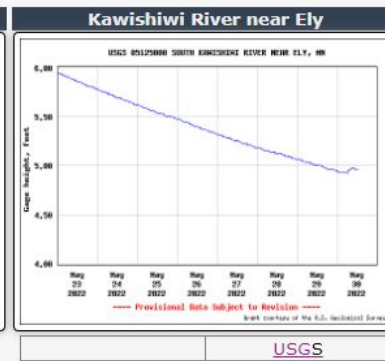
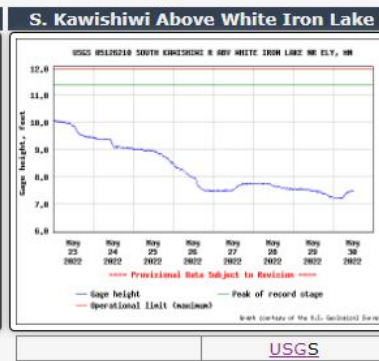
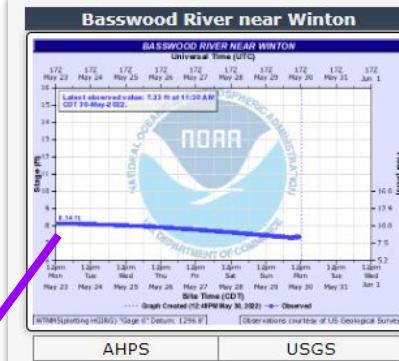
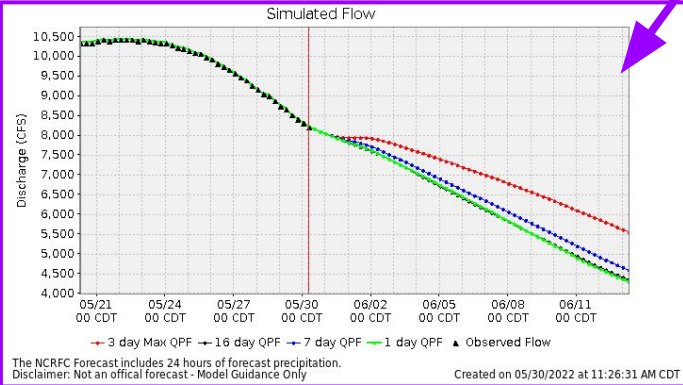


Rainy Headwaters

Basswood River near Winton

- Steady to declining levels in the headwaters
- Levels are still near record high values and **will decrease slowly**
- Rainfall may “pause” the decreasing trend as shown below

Unofficial Forecast for Basswood River near Winton



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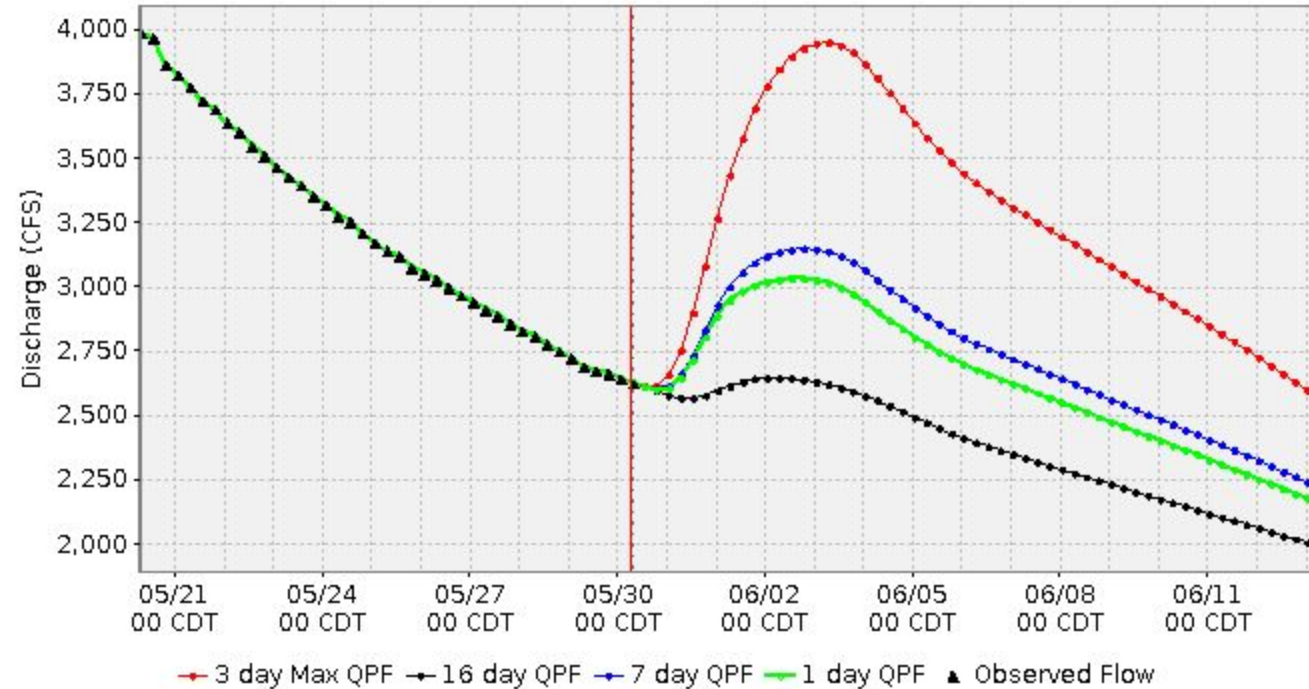
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Vermillion River near Crane Lake

GUIDANCE ONLY - not an official forecast

Simulated Flow



There may be a brief rise due to rainfall, but nothing close to the amount of flow earlier this month when we reached 5800 CFS on May 8th.

The NCRFC Forecast includes 24 hours of forecast precipitation.
Disclaimer: Not an official forecast - Model Guidance Only

Created on 05/30/2022 at 11:26:32 AM CDT



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Namakan Lake (and Kabetogama Lake)

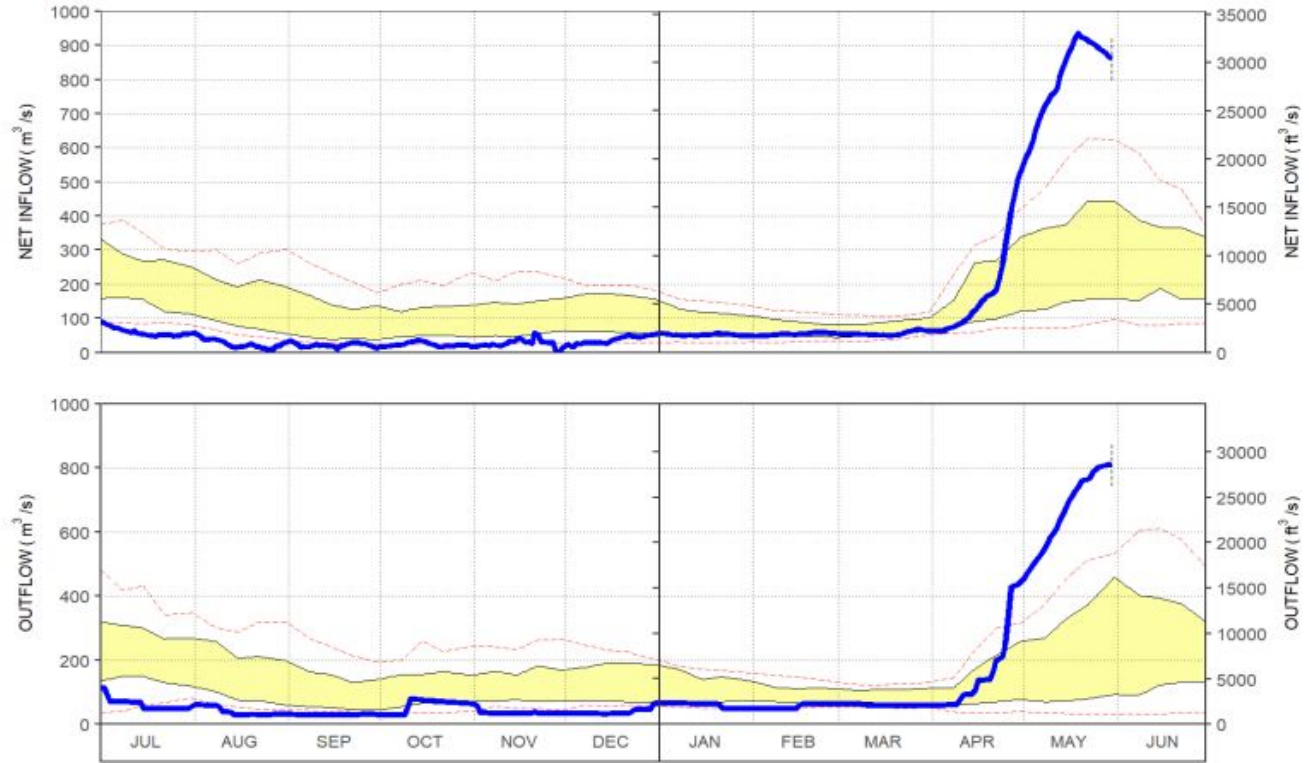
Namakan Lake Inflow / Outflow

Inflow

Appears to be cresting - **greater than outflow by ~1,100 cfs** as of 5/30 - this difference has been *decreasing* in recent days (recent rain will increase inflows for a short time)

Outflow

Still short of meeting the inflow rates - **levels will continue to rise as long as inflow exceeds outflow rates**



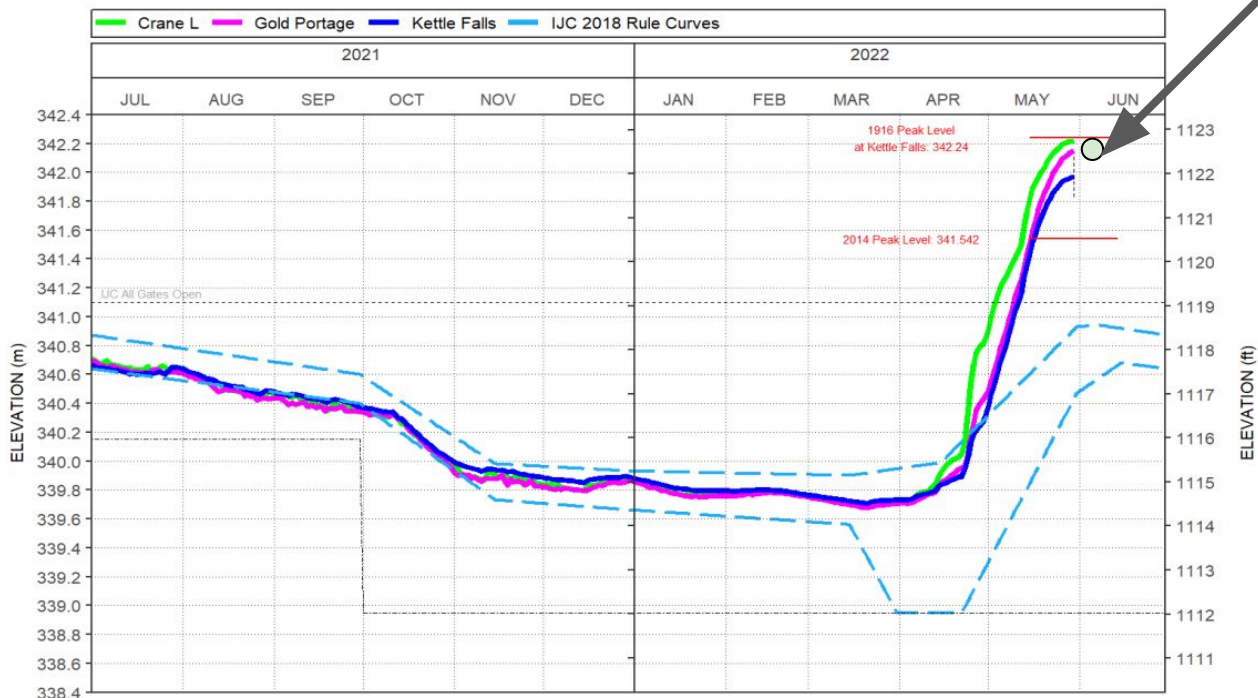


Namakan Lake (& Kabetogama Lake) Forecast



ISSUED: 2022-05-30
Provisional Data

NAMAKAN LAKE



Anticipated rise of 1 to 2"
(2-4 cm) between May 30
and June 5

Levels on Namakan/Kabetogama are expected to reach peak and then begin to fall in the next 7 days.

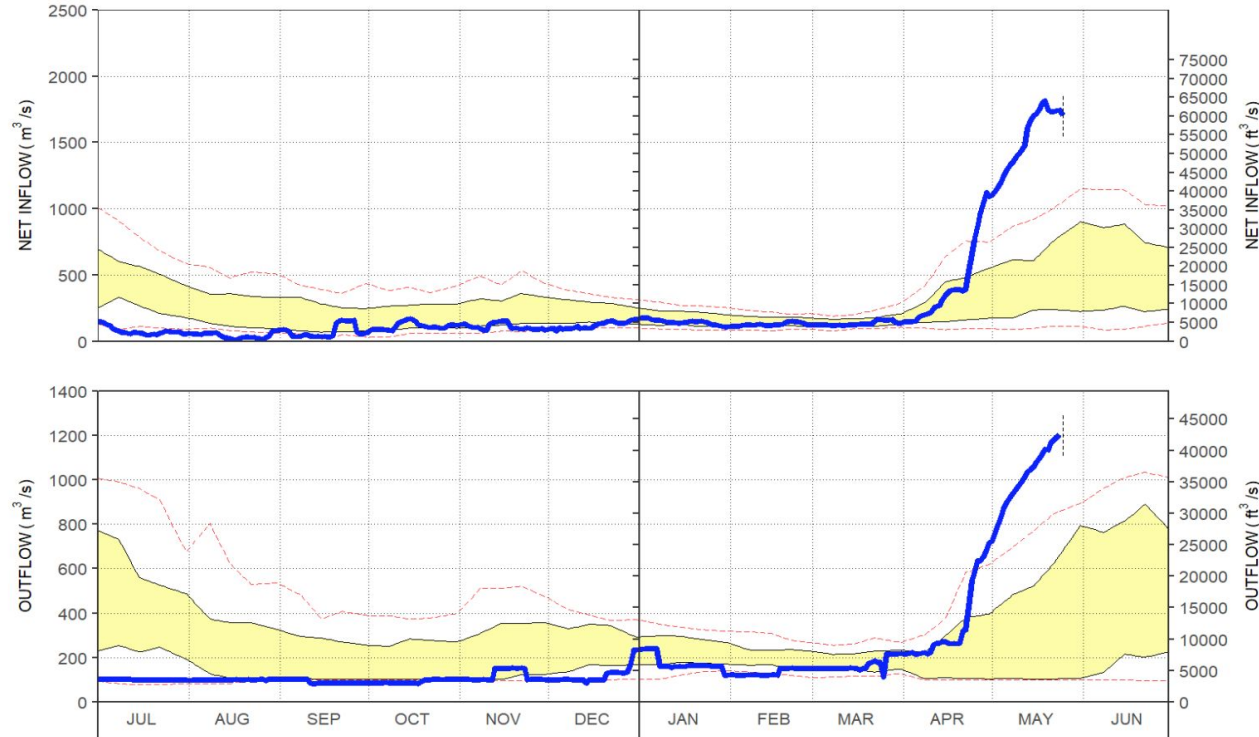
Low End Scenario: Lake Levels on Namakan & Kabetogama may level off June 1-2 if precipitation amounts are on the low-end of the forecast.

High End Scenario: If precipitation amounts are on the high-end of the forecast, Namakan Lake could rise 2 to 3 inches, reaching a peak June 4-7 then beginning to fall.





Rainy Lake Inflow / Outflow



Inflows greater than outflow
by ~ 28,000 CFS 5/25



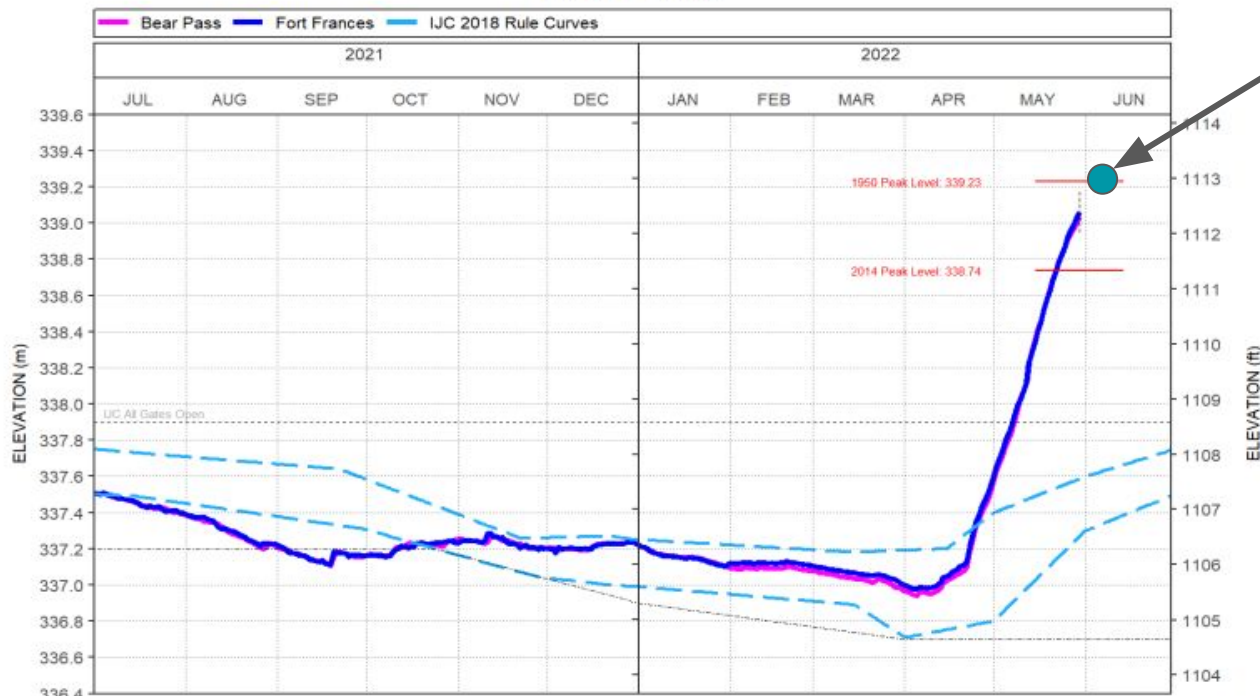


Rainy Lake Level Forecast



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RAINY LAKE



Anticipated rise of **8 to 11 inches (21-28 cm)** between May 30 and June 5

Rainy Lake level will reach the record set in July of 1950, 339.23 m (1112.95 ft), later this week into next weekend.

While the rate of rise will slow down beyond the 7-day forecast, rises will continue until mid June regardless of the precipitation.



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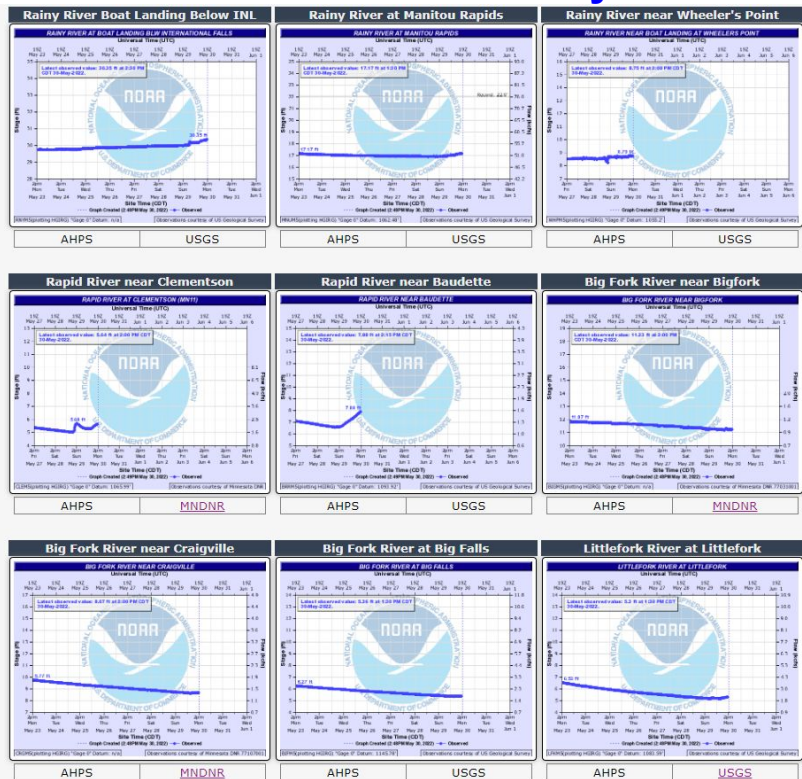
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Rainy Lake Below International Falls Dam

Continued high levels persisting or rising

Current Data - Last few days

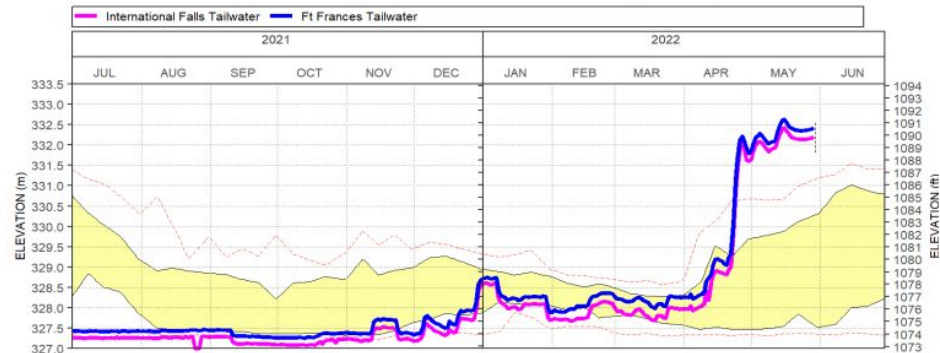


Big Picture - Last few months

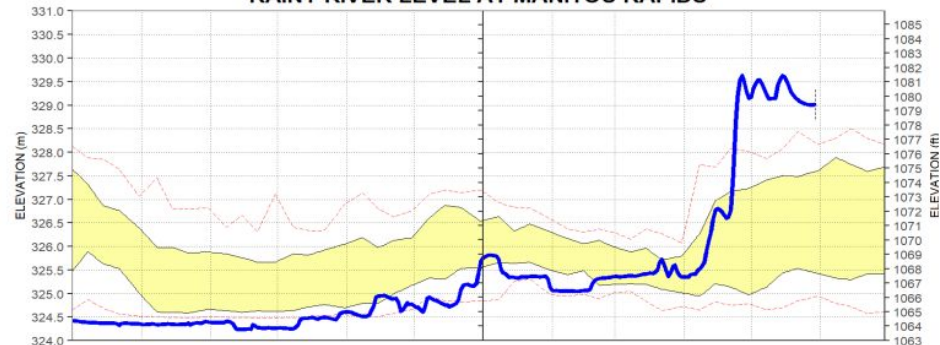


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RAINY RIVER LEVEL BELOW RAINY LAKE DAMS



RAINY RIVER LEVEL AT MANITOU RAPIDS



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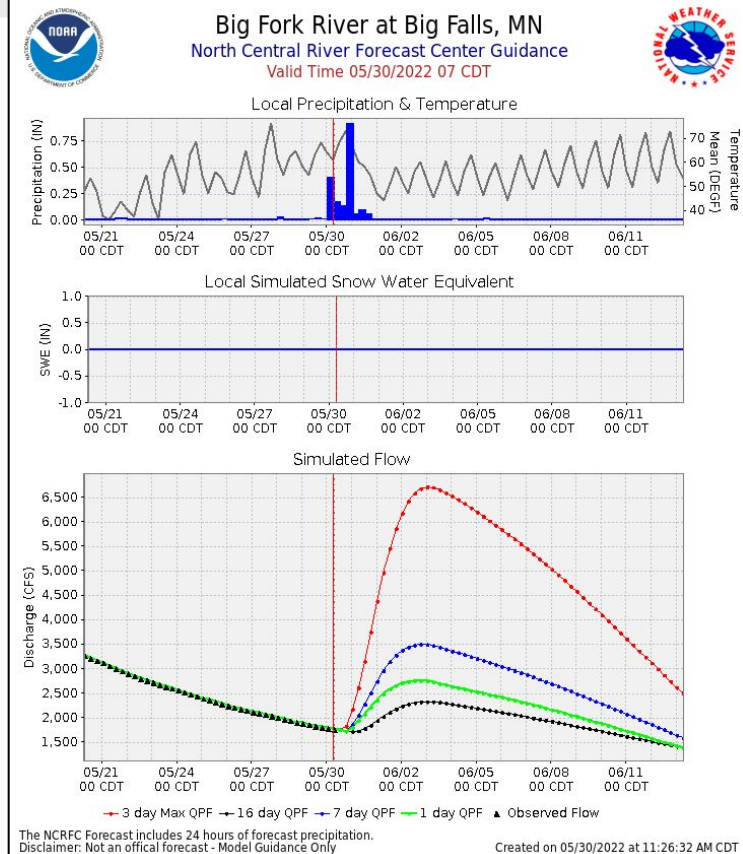
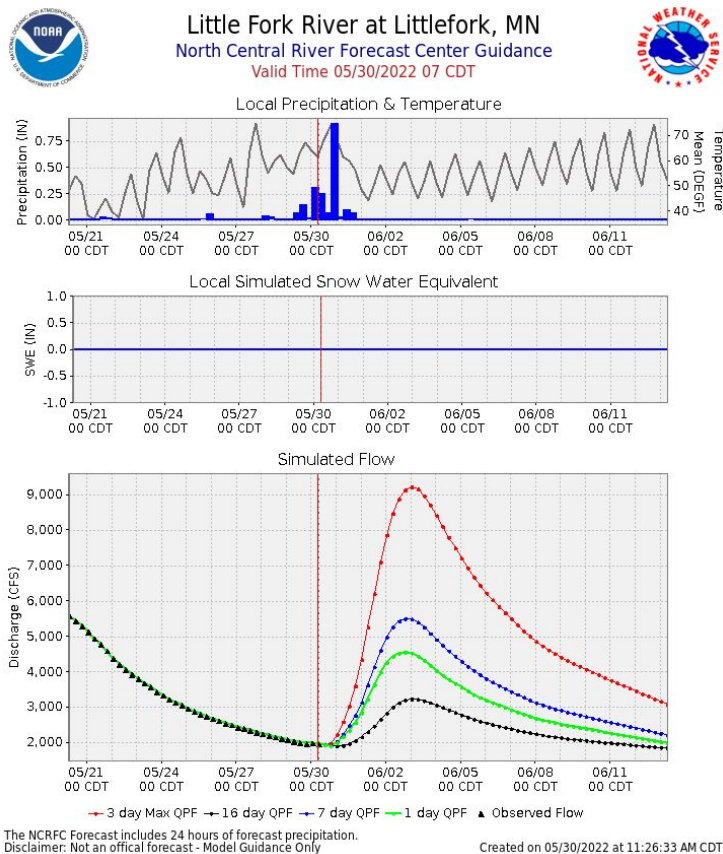
Little Fork and Big Fork

Red = Model run on the higher end of possible rainfall amounts
Black/Blue = More Realistic

Fork rivers are on the rise from 0.5"-1.5" of rainfall on 5/29-5/30AM

Additional rain expected.

Rises may cause flooding on these rivers where they meet the Rainy River



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Rainy Lake Below International Falls Dam

- Depending on the precipitation across the Little Fork, Big Fork, and other areas downstream of International Falls, levels could rise on the Rainy River such as at Manitou Rapids
- Rises could range from a slight increase from current levels (perhaps near to below recent crests) to above recent crests
- **If heavy rainfall is received in the basin (in excess of 3" of rain across a wide area), the level of the Rainy River at Manitou Rapids could approach or even exceed the record of 22'**
 - Not a likely scenario (most likely is to rise to around 20') but it is possible **the Rainy River could rise to levels not yet seen this spring.**



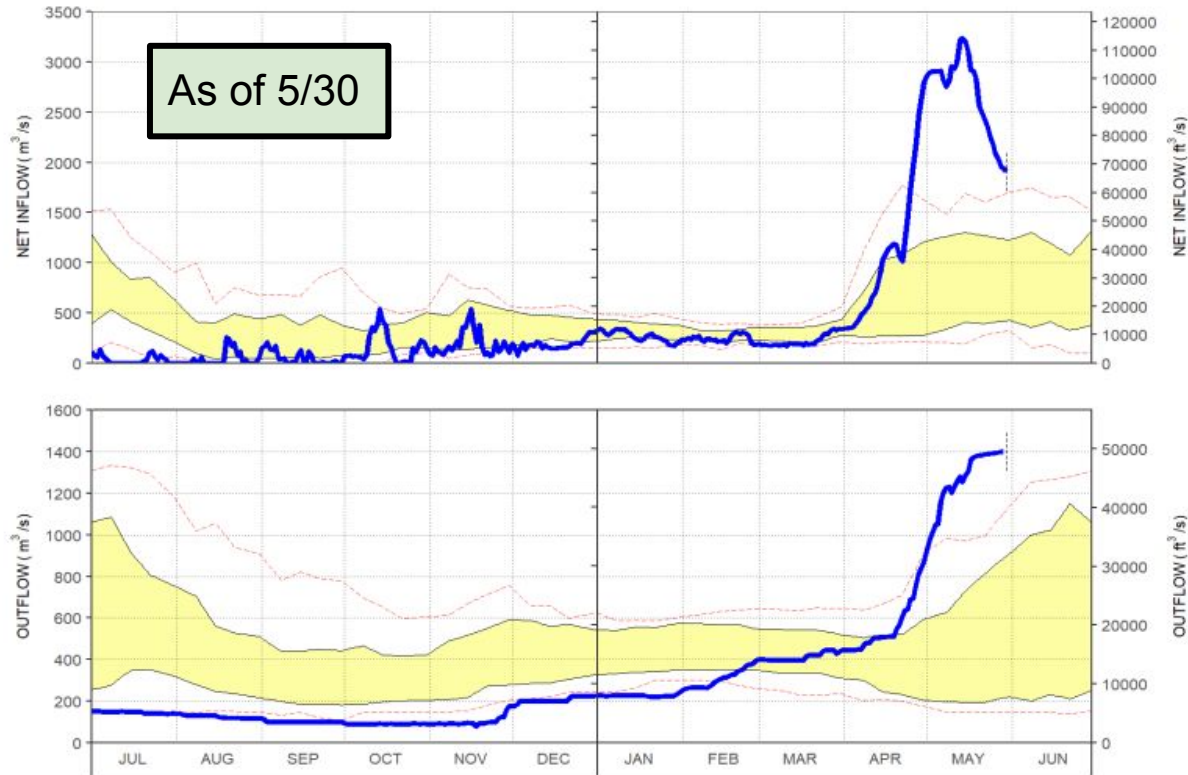
Record height at this station is 22.0' - Gauge height records go back to 2007.





Lake of the Woods Inflows/Outflows

Lake of the Woods Observed Inflow vs Outflow



Inflows decreasing but still greater than outflow by ~ 20,000 CFS



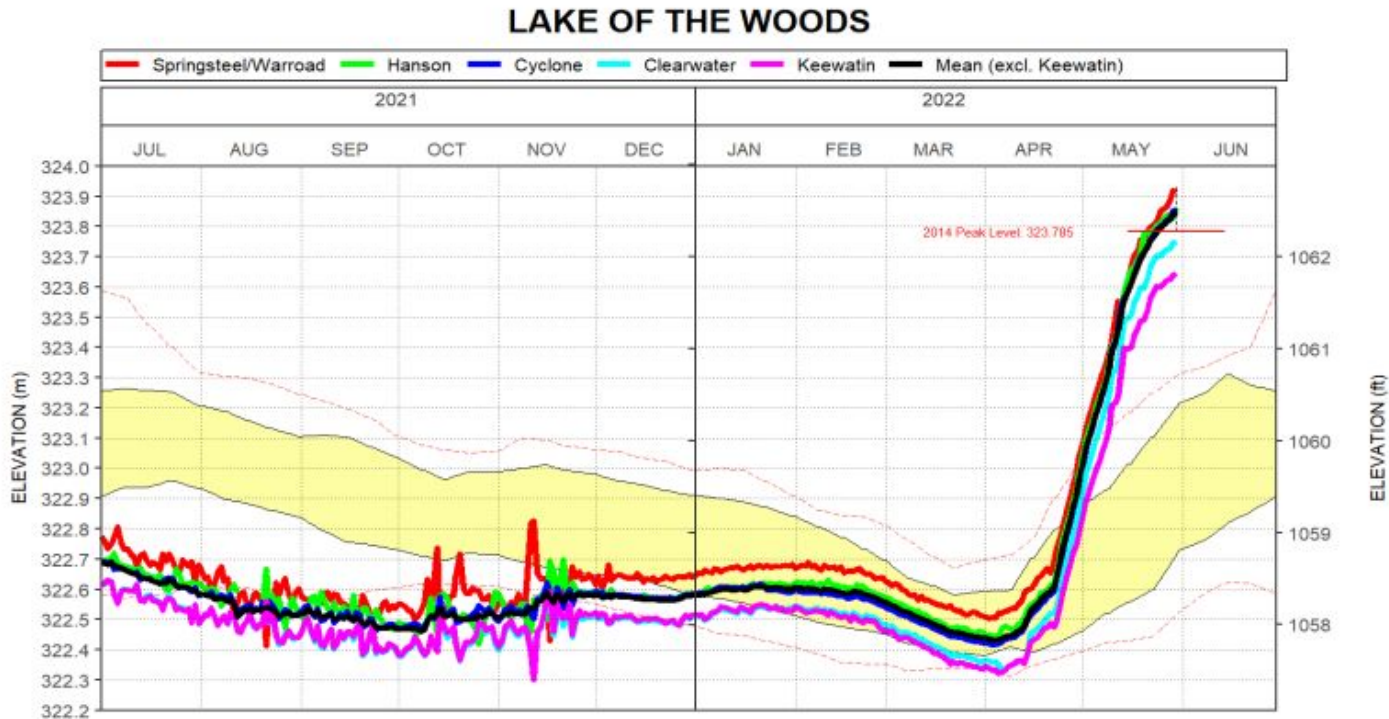


Lake of the Woods Level

Lake of the Woods Observed



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Anticipated Future Impacts

- Lake levels will likely continue to rise into June and continue to cause extensive damage to docks and shoreline property.
- Strong winds could cause wave action, causing further damage along the shoreline.
- **Areas currently experiencing flooding and having to perform mitigation measures will likely continue to deal with these issues for the foreseeable future.**

